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Tiruppur Case Study

Innovation and Textile and Garments Sector

2nd International Conference on the Process of Innovation & Learning in Dynamic City Regions

September 2005

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Innovation and the Textile and Garments Industry in India
(Tiruppur Case Study)

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A) Introduction

Textile industry is one of the main pillars holding the Indian Economy. It constitutes about 14 percent of industrial production, 20 percent of total export earnings, 4 percent of GDP and direct employment to an estimate of 35 million people. In spite of these, India's entire share in the world textiles trade is still maintained at around 3 percent.

Mills, power-looms and handlooms constitute three independent sectors of the Indian Textiles Industry. The mill sector is organized, mechanized and modernized with concentration on the production of yarn, whereas the power-loom and handloom sectors have remained technologically backward and stagnant. Almost all the spun yarn made in India comes from the organized mill sector, reflecting the highly capital intensive nature of yarn spinning. Weaving in the mill sector has been gradually suffering due to the competition from the power-looms and the trend may continue. Most of the India's competitors in textiles in the world market have a much larger number of shuttles-less looms. The hosiery sector caters mainly to the inner garment requirements.

In general, it is seen that the developing countries have a comparative advantage in textiles and clothing trade. This advantage helps them to look beyond exports of traditional primary commodities. Moreover, the income inelasticity of primary commodities pushes the demand for textile and clothing as the developing and developed economies grow. For developing countries the opportunities are high as they enjoy both domestic and export markets. Empirical evidences also show that there are strong linkages between the textiles & clothing industry and other economic sectors, both agricultural and non-agricultural and in "upstream" as well as "down stream" activities.

The Multi-Fiber Arrangement (MFA) and other earlier agreements through quantitative restrictions govern the International trade in textiles and clothing for more than three decades. One of the major milestones of the Uruguay Round was the Agreement on Textiles and Clothing (ATC), which supports the dismantling of the MFA restrictions. Under the ATC, the MFA restrictions are to be phased out over a 'ten year' period and are scheduled to end by the year 2005. The Global textile and clothing trade has increased by around 60 times, from less than $6 billion in 1962 to $395 billion in 2003. Of the total trade, more than 57 percent is trade in clothing and the rest in textiles. As world textile trade has increased by 30 times and trade in apparel has grown by more than 100 times, apparel trade has taken the lion's share of total world Textile and clothing trade.

Asia is a major player in the clothing sector that accounts for more than 27 percent of trade in Western Europe and North America. In fact such a hold in these markets by Asia in spite of Quota Restrictions highlights the opportunities for Asian Region in the Post MFA regime.

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The highlights of the sectoral features of Indian Textile Industries are shown in figure I:-

Figure 1: ***Sectoral Features of Indian Textiles Industry***

Mill	Power loom	Hosiery	Handloom
Highly capital intensive Operates in both spinning and weaving Uses both natural and man-made fibres Organised sector Spinning is the predominant process Uses spindles, looms and rotors	Highly decentralized Caters to the fabric requirements Uses both cotton and non-cotton yarn Produces both gray and processed fabrics Weaving is the predominant process Mainly uses shuttle looms	Highly decentralized Caters mainly to inner garments both cotton and cotton yarn Knitting is the predominant process	Highly decentralized Handloom technology is regionalized Operates as household units Hand weaving is the predominant process Mainly uses all natural fibres

About 45% of India's garment exports are in the form of knitwear. The Tamil Nadu center of Tiruppur plays a pivotal role, generating 90% of knitted garment exports, in other words, about 4% of India's total export trade. Known as 'T-shirt City', the development of Tiruppur is thus critical for the country's commercial prospects and progress towards sustainable development. The city's rapid growth can be attributed to the growth of textiles industry and vice-versa. This report studies the various dimensions of such growth, the mutuality of industrial growth and the growth of the city of Tiruppur. The main challenge still remains for this internationally known Textile cluster, is how the city can maintain its reputation for competitiveness, while putting its operations on a sustainable basis and contributing to the society at large.

B) <u>Brief on Tamil Nadu</u>

Karnataka and Andhra Pradesh bound Tamil Nadu in the north and Kerala bound it in the west. The waters of the Bay of Bengal and the Indian Ocean wash the coastal eastern and southern boundaries respectively. Point Calimere and Mudumalai wildlife sanctuaries define the eastern and western tips of the state while at the northern extreme is Pulicat Lake and at the southernmost tip is Cape Camorin or Kanniyakumari. The state has an area of 1,30,058 sq. km and a population of over 62 million. Traditionally, the land has been divided into 5 major physiographic divisions. The Tamil Nadu 5 districts are: the Kurinji or mountainous region, the Mullai or forest region, the Palai or arid region, the Marudham or the fertile plains and the Neidhal or coastal region.

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Table II: *Vital Statistics of Tamil Nadu*

Sl. No	Economic Indicators	
	Area ('000' Sq.Kms) (2001 Census)	130
	Population (in Million) (2001 Census)	62.4
	Rural	34.9
	Urban	27.5
	Density (Population per Sq.Kms)	480
	Sex Ratio (Females per 1000 Males) (2001 Census)	987
	Urban Population Percentage (2001 (P))	43.86
	Literacy Rate - 2001 Persons	73.5
	Male	82.4
	Female	64.4
	Literacy Rate - 2000 (P) Rural	65
	Urban	84
	Area under Food Grains Rice - 2002-03 ('000 Ha)	1517
	Annual Survey of Industries (Factory Sector) No. of Factories (2001-02)	20,601
	Small Scale Industries (Registered Units in '000) (2001-02)	419.5
	No. of Reporting Mines (All Minerals) 2002-03	203
	Percapita Consumption of Electricity (KWH.) 2002-03	815
	No. of Students in Primary and Secondary Schools per 1000 Population (30-9-2000)	175
	Total No. of Motor Vehicles registered 2001-02	5,658,097
	No. of Bank Offices of Scheduled Commercial Banks 2003-04	4757
	Project (Nos)	261
	Investment (Rs in Cr)	1,415.18
	% Share in Total Investment	13.53
	No. of Newspapers and Periodicals 2002-2003	3093
	T.V. Coverage Area (Percentage March 2003)	93.6
	T.V. Coverage Population (Percentage March 2003)	93.6
	Net State Domestic Product at Current Prices (Rs. Lacs)	14,965,415
	Net State Domestic Product at Constant Prices (Rs. Lacs)	8,557,266
	Percapita Income (in Rs)	
	At Current Price	23,476
	At Constant Price	13,423

Climate

Tamil Nadu has a tropical climate with little difference in temperatures in summer and winter. April and May are the hottest months with the mercury often soaring above the 40°C mark. Coastal regions get uncomfortably warm and humid during these months but the nights are usually cool, thanks to the sea breeze that sets in during the afternoon. Summer temperatures are quite equable in the foothills of the Ghats.

Economy

Tamil Nadu is one of the most industrialized states in India. At present it is the fifth largest economy in the country. Given the high current economic growth rate, Tamil Nadu is poised to emerge as the third largest economy by the year 2005. The State Domestic Product is about Rs.856 billion and current exports are around Rs 153 billion. The main food crops are rice, pulses and oil seeds. Important commercial crops that are grown in Tamil Nadu include sugarcane, cotton, tea, rubber, cashew and coconut. Major forest products are timber, sandalwood, pulpwood and fuel wood while the minor products include bamboo, eucalyptus, rubber, tea, honey and ivory.

Improved port facilities and the effective use of electric power resources have helped industrial development in Tamil Nadu. Cotton ginning, spinning and weaving continue to be the major industries, followed by the production of automobiles, motorcycles, diesel engines, sugar, agricultural implements, fertilizers, cement, iron & steel, paper, chemicals, transformers and electric motors.

Tamil Nadu is rich in handicrafts like; handloom silk, metal icons, leather work, kalamkari (hand-painted fabric, using natural dyes), brass, bronze, copper wares, carved wood, palm leaf and cane articles. The state is an important exporter of tanned skin, hides, leather goods, cotton goods and yarn, tea, coffee, spices, engineering goods, tobacco, handicrafts and black granite.

Policy efforts at different levels by the Government have had their impact on the market and have boosted investor confidence. Tamil Nadu is fast emerging as the 'Blue Chip' state for various investments. Tamil Nadu has done exceedingly well in attracting FDI inflows - ranking fourth among the states in terms of value of FDI investments and second in terms of the number of projects in the pipelines. Notably, Tamil Nadu has emerged as a leading state in South India in the area of attracting FDIs.

Comibatore: Industrial District of Tamil Nadu

The third largest city of the state, Coimbatore, is one of the most industrialized cities in Tamil Nadu. It is known as the textile capital of South India or the Manchester of the South India. The city is situated on the banks of the river Noyyal. It is divided into three Revenue Divisions and Nine Taluks consisting of 482 Revenue villages. The nine taluks are: Pollachi, Coimbatore-North, Coimbatore-South, Avanashi, Palladam, Udumalpettai, Tiruppur, Valparai, and Mettuppalayam.

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Table II: *Vital Statistics of Coimbatore - CENSUS 2001 (Provisional)*

1.	Area (Sq. Km.)	7470.79
2.	Population:	42,24,107
	i. a. Male Population	21,56,280
	b. Female Population	20,67,827
	ii. Density:	566
	iii. Literates:	29,16,996
	a. Male:	16,21,164
	b. Female:	12,95,832
3.	I National Highways: Sq. Km.	330.200
	Ii State Highways: Sq. Km.	3,528.650
	Iii Corporation and Municipalities Road: Sq. Km.	1,143.340
	iv. Panchayat Union, Panchayat Road, Town Panchayat and Townships Road: Sq. Km.	6,082.845
	V Others (Forest Roads): Sq. Km.	226.238
4.	Registered Motor Vehicles	
	I Commercial:	68,526
	ii. Non-Commercial:	718,950
5.	Number of Railway Stations:	19
6.	Number of Air Ports:	2
7.	Principal Exports:	
	1. Hosiery Items 2. Yarn 3. Jasmine4. Areca nut 5. Jewels 6. Software 7. Tea 8. Pumps and Motors, 9. Readymade Garments, 10. Chemicals	

Coimbatore Division is industrially developed, Pollachi is predominantly agriculture and Tiruppur partly agriculture and partly rich in hosiery manufacturing.

In spite of its prominence as a bustling industrial city, Coimbatore still remains one of the most pollution free cities in India. Covering an area of 23.5 square kilometers, the city houses some of the biggest names in Indian Industry. The major industries include textiles, textile machinery, automobile spares, motors, electronics, steel, and aluminum foundries. Tiruppur - a neighboring town has carved a niche for itself in the garments market. Agriculture however remains the major occupation. The rich fertile soil and tropical climate is excellent for the growth of millet, paddy, cotton, tea, oil seeds and tobacco.

This district contributes to the exports of hosiery items, yarn, readymade garments, pumps and motors, tea, chemicals, flowers, jewels and software. More over the industries in this district play a pivotal role in the domestic market.

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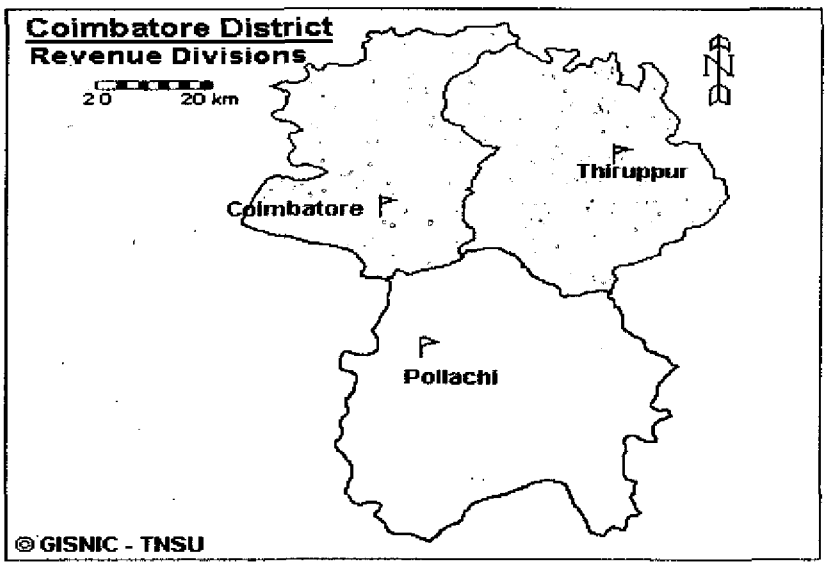
Map I: *Details of Revenue Divisions, Taluks, Firkas and Revenue Villages:*



C) TIRUPPUR (Banian City)

Tiruppur popularly known as "Banian City" of South India, is located 60 km away from Coimbatore city. It has come a long way from a small cotton-marketing centre with a few ginning factories to become a prominent cluster of small and medium manufacturing enterprises gainfully engaged in the production and export of a range of knitted apparels.

This township started with the production of low valued cotton hosiery items, mainly the under garments during the 1930's. Mr. Gulam Kadar brought knitting to this city in the year 1937. He established "Baby Knitting Industries" in Kaderpet area of Tiruppur. It was followed by the establishment of second knitting unit, the Chellemmal Knitting Unit which, was established by Mrs. Chellammal.

The growth of knitting industry in Tiruppur can also be attributed to the failure of agriculture crops over a period of time and the availability of yarn, the basic raw-material for knitting from the nearby mills in Coimbatore. A few people also suggest that the dry climatic conditions in the area also helped the growth of this industry. Before knitting the agricultural laborers were already exposed to the hand-woven textiles because of khadi movement started by Mahatma Gandhi, which lead them to the knitting process of textiles. Started in 1930s as undergarment suppliers to domestic market, the number of knitting units reached around 450 in 1960.

Mohan Knits through a Bombay Merchant Exporter made the first export of knitted garments to US and Ghana in 1972. However, it could not be sustained. In the later years, the entrepreneurial spirit and heavy competition for the domestic market forced the manufacturers to look beyond national boundaries. Thus, in 1980s a few units made sustained efforts to exports and succeeded. In 1987 the exports revenue of Tiruppur was

Rs.75 Crores[1]. Since then, it has not looked back and the exports during the year 2004 touched a figure of more than Rs. 5,000 Crores contributing almost 80 percent of country's exports in this sector.

Table III: *Tiruppur Knitwear Exports*

YEAR	QTY.IN LAC PCS	VALUE IN LAC USD	VALUE IN CRORE INR
1996	2,574 (47.87%)	5,443 (38.29%)	1,892 (38.16%)
1997	2,943 (46.54%)	6,042 (37.77%)	2,214 (37.81%)
1998	3,385 (49.63%)	6,168 (37.91%)	2,540 (37.79%)
1999	3,680 (48.52%)	6,897 (36.58%)	2,968 (36.55%)
2000	4,104 (49.58%)	7,616 (37.28%)	3,423 (37.29%)
2001	3,724 (51.87%)	7,186 (40.30%)	3,389 (40.30%)
2002	3,448 (52.83%)	6,667 (41.78%)	3,239 (41.78%)
2003	3,704 (54.57%)	7,935 (43.62%)	3,700 (43.61%)

Figures within brackets show % of Tiruppur share to all India Exports

Industry Around Tiruppur

Though Tiruppur and its growth are unique in itself, there are quite a few industries in and around Tiruppur. As has been pointed out earlier, the neighboring Coimbatore City is known for its machine tools, pumps, yarn and fabrics. The nearby districts like Karur and Erode are known for bed-sheets, curtain cloth, mosquito nets and other made-up items. Karur district also has lots of processing units for natural dyeing. Another neighboring district is Udumalipet which, is a fertile area and grows coconut, aricanut, cotton etc. the coir industry is also growing in this district.

The nearby areas of Tiruppur like Somanur, Avinashi, Palladam and Koduvai are also actively involved in Textile industry. The first three places have lot of power-looms and Koduvai focuses on handloom. The constraints faced by Tiruppur in terms of infrastructure and labor problems are leading to the development of industrial activities in the nearby areas/districts. Some of the exporters have already started locating their expansion activities in Udumalipet and Pollachi districts.

Table IV: Vital Statistics of Tiruppur

Parameter	Total	Male	Female	Percentage	Sex Ratio
Population	677978	351911	326067	100	927
Literates	469780	268023	201757	78.07	753
Illiterates	208198	83888	124310	21.93	1482
Workers	331095	239442	91653	48.84	383
Households	175891				
Total No of households	70543				
Electricity available to Population (per 1000)	949				

Composition of Industrial Growth in Tiruppur

Tiruppur cluster comprises are around 5,000 units. These units are involved in one or an other activity of Textile value chain. There are no precise data available as to the exact number of units in the different areas of value chain. However the growth of the Garment industry as a whole can be traced to the specialization of different activities up to the stage of

[1] Crore = 10,000,000

garmenting in Tiruppur. Such specialization has given the required cost advantage to compete in the international markets. The following table shows the composition of different units in the textile value chain in Tiruppur.

Table V: *Spread of Units in the Textile Value Chain in Tiruppur Cluster*

	Value Chain Activities	Number of units
1	Knitting/Stitching units	2500
2	Dyeing and Bleaching	750
3	Fabric Printing	350
4	Embroidery	150
5	Other Ancillary units	250
6	Compacting & Cal ending	200

Source: Background Study of Tiruppur, Fair Wear Foundation, 2004

A notable feature of the industry in Tiruppur is their organizations in household workshops started mostly by owned funds of enterprising individuals. As the industry develops, the entrepreneurs develop also high specialized skills and aptitudes that helped them to seize the generated opportunities to provide supply to the overseas demand.

The following are the predominant features of Tiruppur Textile Cluster:

- Cotton based knitted garments;
- Majority of the units being in the proprietorship/partnership firm of organization controlled and directed by family management;
- Large number of units is involved in doing cutting, making and trimming knitted fabrics in pieces; and
- Limited number of vertically integrated production units and a high degree of subcontracting relationship to knitting, processing and finishing operation.

From being the producers of basic knit garments for lower end of the domestic market, Tiruppur knitwear cluster today has a diversified production range comprising the following: T-shirts, polo shirts, sportswear, sweat shirts, ladies dresses, children garment, nightwear, etc.

This cluster reflects high degree of specialization in most areas including machinery supply besides every area of the manufacturing operation.

Innovative business development services such a pre-production checks, initial and during production checks, product consultancy, laboratory testing, and sourcing assistance are provided by several enthusiastic entrepreneurs that help the industry to improve.

There are fifteen active industry associations, which are playing commendable role in helping the firms by playing quasi-judiciary role to settle various inter and intra firm disputes besides procedural formalities, information assistance and the lobbying role with the government.

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The important growth factors of this cluster are: pro-active marketing, adaptation to latest technology and inter firm production arrangements. However, the major issues that concerns this industry for the sustainability of growth in the future relates to infrastructure and organization matters together with the challenges faced by the World Trade Organization (WTO) impact.

Water scarcity, electric power supply and increasing pressure on the roads have put considerable strain on the growth of this cluster. With the firm increasingly moving towards higher value addition, quality and design inputs are becoming more crucial. However, the industry has grown considerably over the last one decade with considerable joint initiatives by firms through associations and government support.

Infrastructure

Infrastructure plays a vital role in the development of textile industry in Tiruppur. Though it is still suffering from infrastructure bottlenecks, we may not be able to totally brush aside the development taking place in Tiruppur city.

There are around twelve colleges and twenty-four high schools in Tiruppur that provide basic skill required for the human resources. Similarly, there are various banking companies operating in this small town. Almost all the top performing public sector banks and multinational banks like ABN-Amro are having branches in Tiruppur. More over, developmental financial institutions like SIDBI also operate from this town to facilitate industrial activities. There are five primary health centers and ten big hotels that are located in Tiruppur. Some of these hotels have state of the art conference facilities and seminar halls and most of the social and recreation facilities. The construction activity has increased over the years and the real estate prices are skyrocketing. There are also textile industry specific institutions functioning in Tiruppur. The Apparel Export Promotion Council (AEPC) has a full- fledged office in Tiruppur which was looking after quota-administration in the MFA era. National Institute of Fashion Technology (NIFT) has established its center to provide training in the area of fashion, design skills etc.

Currently, the Government and other trade promotion bodies and industrial associations have initiated various infrastructure development activities directed towards textiles industry. Some of such initiatives are:

1. Water project to take care of both societal and industrial requirements with an investment of Rs.1,000 Crores implemented through New Tiruppur Development Authority;
2. Windmill project with an investment of Rs.24 Crores to generate 4-megawatt power has been taken up under Tiruppur Export Knitwear Industrial Complex;
3. In order to facilitate SMEs in dyeing and processing there exist eight common effluent treatment plants, out of which five are through New Tiruppur development Corporation. These five units also have reverse osmosis system for complete treatment of industrial effluents; and
4. Bridge of the Nayyal River and a workingwomen's hostel are also coming up in Tiruppur under the Industry Infrastructure upgradation Scheme.

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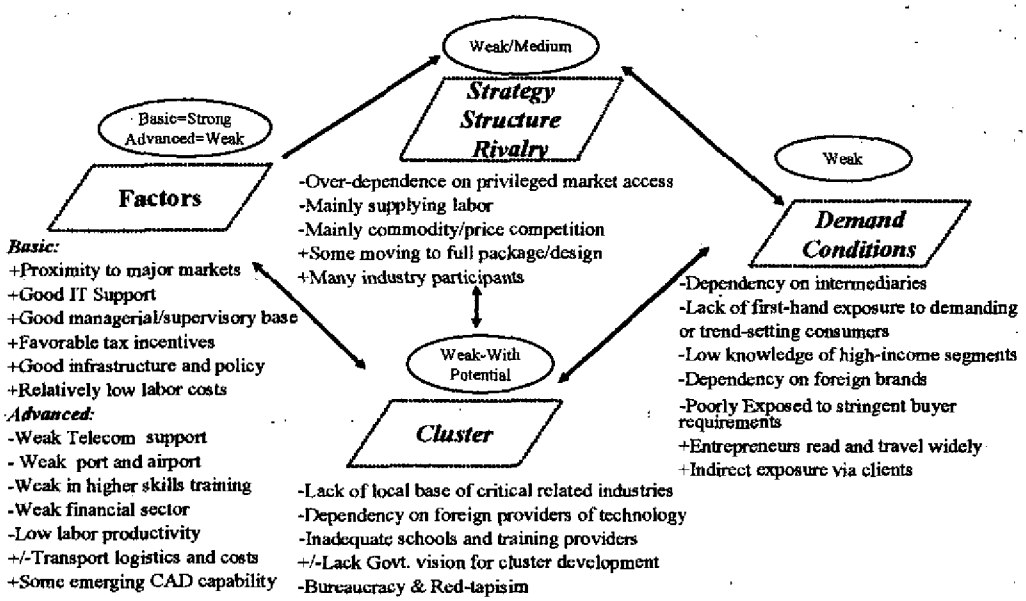
However, the phenomenal growth of the industry put lot of pressure for more infrastructure development. There is a wide mismatch between the rate of industrial growth of Tiruppur and the growth of infrastructure. It appears that the infrastructural growth could not cope up with the demand of the industry.

Growth Factors *(Supported by Video)*
Tiruppur's performance in Textiles originates from its performance in technology and the quality of its macro economic environment. It also derives much of its ascent from improved perception of its public service. Buyers from 35 countries frequently visit Tiruppur. Tiruppur can deliver customized samples in less than12 hours or half a million pieces in a matter of days. 56% of India's total knitwear exports come from Tiruppur. This has been recognized on the 2002-07 Export-Import Policy, of Government of India that conferred the status of "Town of Export Excellence" to Tiruppur. The rich availability of Raw materials, being in close proximity to Coimbatore which is a major center of cotton spinning industry in the Country, makes Tiruppur able to access its basic raw materials quickly and as required. This also facilitates the strong entrepreneurial and personalized management skills that contribute to efficient management of negotiations and direct control of operations. This in-tum resulted on cost effective competitiveness of the Industry; quick delivery and quality products which, add dimension to the Tiruppur's strength as a center to outsource excellent products.

The growth of the Industry can be looked through the elements of competitiveness Diamond as given on figure II below:

Figure II: *Competitive Diamond.*
TEE in Indian Textile



Incentives & Resources

Incentives from Central Government:

1. Considering the need to upgrade technology in different segments of the textile industry, the Government of India has launched a Technology Upgradation Fund Scheme (TUFS) for Textile and Jute Industries, April1999, for a period of 5 years, i.e., up to 31st March 2004. The period of implementation of TUFS has been extended up to end of the 10th Five Year Plan i.e. 31.03.2007.The main feature of the scheme is to provide a reimbursement of 5% point on the interest charged by the lending agency on a project of technology upgradation in conformity with this scheme;
2. Establishment of Power loom Service Centers that act as a one stop shop for training weavers, testing facilities, design development, technical consultancy and dissemination of information about modernization of looms;
3. Setting up of Computer Aided Design Centers. The Government has announced a Group Insurance Scheme with a view to provide a social security cover to the workers of the power loom sector in association with the Life Insurance Corporation of India; and
4. Recently the Government has announced a Group Workshed Scheme under which, subsidy for construction of workshed would be limited to 25% of the unit cost of construction subject to a maximum of Rs.80/- per. sq. ft. The maximum permissible subsidy per beneficiary shall be restricted to Rs. 11.52 lakhs to cover an area of 14,400 sq.ft @ Rs.80/- per. sq. ft., for both power loom sheds and preparatory units. Balance amount may be raised as loan from financial institutions like banks, SFCs or HUDCO, or may be contributed by the beneficiaries from own sources. Any escalation due to delays or inflation would have to be borne by the beneficiary.

Incentives from the Tamil Nadu Government:

The Tamil Nadu Government has framed a textile policy for the state in 1998 and provides support to the Textile sector. The following measures were announced as part of the same for the knitwear and garment sector:

1. The Government encourage the growth of the knitwear and garment industry by providing necessary physical infrastructure. The Government also encourage setting up spinning units dedicated to the production of hosiery yarn;
2. As a forward linkage to the power loom sector, the Government set up Garment Export Park(s) in the state to encourage the power loom sector to produce fabrics to meet the requirements of garment exporters;
3. Production of blended power loom fabrics in fibers other than cotton is encouraged through funding and development efforts implemented by recognized institutions, particularly, silk fabrics for export; and
4. Production of industrial fabrics including filter fabrics, canvas geo-textiles, non-woven, etc., are also encouraged through funding and development efforts implemented by recognized institutions.

However the major focus of the State Government remains on the Handloom sector. Hence there are no visible incentives that can be traced for Tiruppur other than the strong commitment from the private sector.

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Role of Support Institutions *(Supported by Video)*

There are number of local representative institutions and support bodies, as well as initiatives on the part of the State, that have an important impact on the development of the knitwear sector in Tiruppur. There are, for example, various macro support strategies for small scale industry in India which also apply to this sector. These provide tax benefits and subsidized credit. However, There is no empirical evidence of the impact that these SMEs' benefit packages have provided to local small producers in Tiruppur. Their continued importance, though, is partially reflected in the practice of firms splitting up at reaching certain size thresholds. In terms of more targeted institutional support to the local knitwear industry, a few organizations stand out. These are: the Textiles Committee under the Ministry of Textiles, Apparel Export Promotion Council (AEPC); the South Indian Hosiery Manufacturers' Association (SIHMA), Tiruppur Exporters Association (TEA) that represents the city's knitwear exporters; and Knit Cloth Manufacturer's Association (KNITMA).

The 'Textiles Committee's' main objective is to ensure the quality of textiles and textile machinery both for internal consumption and export purposes. The Textiles Committee, as corollary to its main objective of ensuring the quality of textiles and textiles machinery has been entrusted with the following functions:

1. To undertake, assist and encourage scientific, technological and economic research;
2. To establish standard specifications for textiles, textile machinery and packing materials;
3. To establish laboratories for the testing of textiles and textile machinery;
4. To provide training in the techniques of quality control;
5. To provide for the inspection of textiles and textile machinery;
6. To promote export of textiles;
7. To collect statistics; and
8. To advise the Central Government on all matters relating to textiles and textile machinery, etc.

In Tiruppur, the Textiles Committee has created an excellent impact on the industry through continuous and timely interventions. It is involved in almost all the value chain activities and maintains relationship with all the Industrial Associations. It is seen by the Industry as a dependable and most active Government body by the Tiruppur Exporters.

The Apparel Export Promotion Council (AEPC) acts both in a regulatory as well as a promotional role in the local knitwear industry. The AEPC was set up in the year 1978 by the union government to stimulate export growth and act as advisor to buyers, exporters and government. It had in the mid 1980s over 6,000 members who were all exporters, and had set up regional offices in various locations, including Tiruppur to provide export services support. In Tiruppur, the AEPC has a dual role: to administer the export of garments via the management of a quota system and to deal with the implications of bilateral trade agreements in force with importing countries. Secondly to promote the export of Indian garments. The AEPC also sponsors buyer/seller meetings, organizes trade delegations, individual sales tours and sets up market survey teams. The council collects trade data, both locally and from abroad, and is particularly active in seeking out markets in countries where India's exports are not quota bound (such as Eastern Europe, Latin America, and East Asia).

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Tiruppur Exporters Association (TEA) is a dynamic association, formed in the year 1990 with 500 direct members. TEA offers a lot of value added services to its members. These services include: technical skill upgradation through NIFT-TEA, arranging contact with buyers through IUF, disseminate market information government policy changes through their bulletin and Emails systems.

The achievements of TEA include establishing an inland container of India Knit Fair Complex for conducting trade fairs. As well establishing the TEA Public School for Fashion Institute.

Some of the special assignments taken up by TEA are:

- Apparel park of 65 units in a 175 acre land;
- Promotion of a common brand to gain differentiation advantage; and
- Strengthening and widening the road commonly NH-47 & NH-67 for carry transportation and movement of goods.

Leading Industry Associations in Tiruppur

South India Hosiery Manufactures Association (SIHMA) is one of the oldest association established in 1951 with 60 export members and 1200 domestic members assisting them to get financial assistance from the banks and financial institutions. On the procedural front, assistance is also provided in getting the registration certificate of small-scale industry, and issuing both the RBI Code and the exports import license. It also files legal suits in courts and represents on behalf of their members. SIHMA offered various Human Resource Management (HRD) training programmes in the following areas:

- Women entrepreneurship training through SISI;
- CAD course for exporters;
- Skill upgradation courses for merchandisers in pattern making, quality control; and
- Facilitating ISO certification through BDI providers.

Tiruppur Dyers Association is Established in the year 1985. Currently, operating with 750 members, assisting them through advocacy on policy issues. It also acted on a principal body in setting up of eight common effluent treatment plants. It has coordinated with Textiles Committee for various Skill upgradation programmes for the capacity building of its members.

Industry Associations in Tiruppur

1. Tiruppur Exporters Association (TEA);
2. South India Hosiery Manufacturers Association (SIHMA);
3. Tiruppur Export Knitwear Manufacturers Association (TEKMA);
4. Tiruppur Dyers Association (TDA) ;
5. Tiruppur Screen Printing Association (TSPA);
6. Tiruppur Narrow Tape Manufacturers Association (TNTMA);
7. Tiruppur Cloth Stitching Section Association (TCSSA);
8. Indian Hosiery Yarn Mills Association (IHYMA);
9. Tiruppur Cotton Merchants Association (TCMA);
10. Tiruppur Merchants Association (TMA);
11. Coimbatore District Power loom Cloth Dealers Association (CDPCDA);
12. Tiruppur Power loom Association (TPA);
13. Tiruppur Hosiery Yarn Merchants Association (THYMA);

14. The Knit Compactors Association (KCA);
15. South Indian Imported Machine Knitters Association (SIIMKA); and
16. Knitcloth Manufacturers Association (KNITCMA).

These institutions have rendered lot of services in the development of this industry.

The following map shows the institutional linkage mapped for the industry in Tiruppur:

Map II: *Institutional Linkage Map*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SME	X	H	M	M	M	M	H	H	H	M	M	M	M	M	H	H	M	H	L	L	L	M	H
DIC		X	L	L	L	L	L	M	L	L	L	M	M	L	M	L	M	M	L	L	M	L	L
KNITMA			X	L	L	L	L	L	L	L	L	M	L	L	H	L	M	M	L	L	L	L	L
TEKMA				X	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SIHMA					X	H	M	H	M	M	H	L	M	M	M	M	M	M	L	L	H	L	L
TDA						X	H	L	L	M	H	L	L	L	M	L	M	H	L	L	M	L	L
TEA							X	H	H	H	H	L	M	M	H	M	M	M	M	H	M	L	L
AEPC								X	M	H	M	L	L	L	L	M	M	L	L	M	L	L	L
ICD									X	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SITRA										X	M	L	L	L	L	L	L	L	L	L	L	L	M
TC											X	L	M	M	L	M	H	H	L	H	M	L	M
THADCO												X	H	L	L	L	L	L	L	L		L	L
SIDCO													X	L	L	L	L	L	L	L	L	L	L
NSIC														X	M	L	L	L	L	L	L	L	L
BANKS															X	L	L	L	L	L	L	L	M
BUYING AGENT																X	L	L	L	L	L	L	M
UNIDO																	X	M	L	H	H	L	L
PCB																		X	L	L	L	L	L
FICCI																			X	L	L	L	L
TEANIFT																				X	M	L	L
SIDBI																					X	L	L
SGS																						X	L
LABTEX																							X

L - LOW M - MEDIUM H - HIGH

(Source: Textile Committee, Tiruppur)

Issues of Governance *(Supported by Video)*

The issue of governance for Tiruppur and the Textile Industry revolves around the growth pattern of this city over a period of time. The discussions with some of the social activists in the town shows that *the growth of Tiruppur is mainly because of a community oriented growth.* Any kind of Stereotype interventions, which have a mismatch with, the community expectations were found to be futile. This may be one of the reasons because of which the industry associations have a strong governance role in shaping up the development of the city.

It has been observed that all the activities of the town, from a small teashop to a big department store revolve around the knitting industry and associated activities. As has been mentioned earlier in 'Infrastructure' about the infrastructure development, it can be seen that all Government initiatives are in one way or an other being taken up by the Industry Associations. The Industry Associations are contributing a lot for the social development including provision of basic needs like water. On the social front, the textile and garments industry provides large scale employment to women, which has given opportunity for women from other districts and neighboring States, like Kerala State, to migrate to Tiruppur city.

In the garment industry, due to the nature of job and social acceptance, it is found that women are more suitable on the shop floor. However, capacity utilization of these garment units by running three shifts becomes a problem with the increase in the number of women who have the family and household responsibilities.

Some of the governance issues, which are hampering the growth of the industry and quality of life, are as follows:

I. Lack of health centers and hospitals for the people. There are only primary health centers that can provide basic medical facilities, these becomes important in a town where the working population is very high and incidence of industrial accidents is high;

II. There is increase in the demand of specialized training institutes to provide advanced skills. Currently, though there are institutions in the nearby areas like Coimbatore, the need for establishing skill development institutions with requisite exposure on IT advancements is highly required;

III. Social services within the city is one of the major problems reducing the quality of life of people. Though, the industrial associations are trying to address this problem, it should be remembered that the associations are mainly to develop business rather than providing only social services. Hence the local Government and the State Government takes up this issue on a priority basis; and

IV. Currently, the individual and community centers provide support and services on social security measures. The demand for this type of services is increasing with the increased number of working women, especially in the wake of increasing non-tariff barriers in the International Trade on social security measures.

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Environment Issues *(Supported by Video)*

Industrialization and urbanization are processes which, cause environmental degradation if not carefully guarded. The industrialization rapid development plays both a beneficial and harmful role in the environment. In Tiruppur there are about 450 foundries, 300 motor manufacturing units, 200 wet grinder manufacturing units, about 300 brick clines and 210 textile dyeing and bleaching units in operation. As in other Indian cities, there is no separate zone for industrial and commercial activities. Therefore, some industries are located in residential areas. Urbanization and industrialization increase the use of automobile vehicular for various activities. This results in severe pollution problems, which is a major health concern. Tiruppur is facing an other problem of environment pollution, that is the application of primitive processing methods of dyeing.

One of the most significant challenges for the Tiruppur textile industry today is water. Textile production, particularly dyeing and bleaching, can be water-intensive and can generate large quantities of waste effluent. Tiruppur is in a dry-water-scarce region. The rapid expansion of the textile industry has taken place in an unplanned manner, with no associated development of supporting infrastructure or institutional capacity. As a result, the growth has led to the depletion of groundwater reserves and a serious deterioration in environmental quality of both surface and ground water. Typical water consumption in Tiruppur is around 200 to 400 liters/kg of finished product, compared with the international norm of 120 to 150 liters/kg. The city does not have a reliable piped water supply. The private water suppliers abstract ground water and supply it to the textile industry using tankers. Ground water in neighboring areas has been decreasing and becoming contaminated. This has forced the tankers to travel even-larger distances to draw the water. Lack of adequate water supply have inhibited growth and slowed down the flow of new investments.

Most of the bleaching and dyeing units in Tiruppur are located in clusters along the banks of the River Noyyal and River Nallar, into which they were, until recently, discharging effluent. The two rivers are natural drainage courses that only carry water in the monsoon period. During the remainder of the year, they only carry industrial effluents that stagnate in the riverbeds and percolate into the groundwater. As a result, the groundwater quality around the cluster of bleaching and dyeing units is polluted to such a level that it is unfit for domestic, industrial and agricultural activities. Estimated wastewater generation from the nine industrial clusters in Tiruppur is around 102 million liters per day. The bleaching and dyeing processes are the main causes of pollutants that include caustic soda, hydrochloric acid, sodium hydro sulphate, hypochlorite and peroxides. Typical characteristics of the effluent are presented in the following TableVI.

Table VI: *Typical characteristics of wastewater from bleaching and dyeing units in Tiruppur*

Parameters	Bleaching	Dyeing	Composite
PH	10	9.5	8.8
Biological Oxygen Demand (mg/L))	300	380	330
Chemical Oxygen Demand (mg/L	650	700	660
Total Suspended Solids (mg/L)	300	350	300
TDS (mg/L	6560	9000-10000	8620
Colour	Whitish	Intense Colour	Intense Colour

Due to public pressure, the court intervened and closed the dyeing units several times since 1997. Recently, in June, 2005, this has taken an ugly turn, when the Chennai High Court

ordered complete closure of the dyeing units and slapped Crores of rupees of compensation to clean the environment on the dyeing units. Such an action has created a furor in the whole textile industry as this would lead to more problems when the demand for the knitwear is increasing due to the Multi-Fiber Agreement (MFA) phase-out.

The Faculty of Environmental Studies, University of Madras, undertook a Resource Flow Analysis (RFA) for the city of Tiruppur. This analysis stood as an example of how a Regional Resource Flow Analysis could be effectively used.

A large quantity of salt is used in the dyeing process. The waste-water of this process which, amounts to 90 million liters per day, is highly saline and is contaminated with a variety of chemicals. As there is hardly any source of fresh water nearby, the trucks bring in water from ground water sources at a distance of 50 Kms with an enormous cost. A massive US$ 30 million waste-water treatment project is under implementation with the supervision of the Central Effluent Treatment Facilities.

The aggregate figures of the RFA analysis immediately showed that water could be recycled profitably. On the basis of the study, a private entrepreneur developed a water recycling system, which could be installed in each dyeing unit. The system used the waste heat from the boilers already working in the dyeing units for the recycling process. This is a relatively low cost system, which is gaining popularity in the Tiruppur city.

The second outcome of the RFA study was that the calorific value of the solid waste (garbage) was high as it contained large quantities of textile and paper wastes. This could be used effectively to partially replace the 500,000 tones of scarce firewood being used in the city. There is grave concern over rapid deforestation in India. Since the use of the firewood is distributed over nearly 1,200 points, it was not obvious that such large quantities of firewood were being used. The possibility of setting up a central steam source, which was required by some of the industries, is also under serious consideration in order to reduce the consumption of firewood.

Innovations Achieved & Planned *(Supported by Video)*
The cooperative Strategies adopted by the industry, Trade Promotion Organizations, Financial Institutions and the Government has led to various innovative measures. The creation of Special Purpose Vehicle (SPV) for huge infrastructural project is an excellent example of innovativeness in the development of Tiruppur. It has been continuously reiterated that entrepreneurial skills and technical skills are important factors leading to the success of this industry in Tiruppur. To imbibe these qualities, an innovative approach has been taken by one of the institutions, Kumaran Kalvi Kazhagam which runs Vivekananda Vidyalaya. This school gives the exposure to the students on the various aspects of textile industries and the need for more entrepreneurs in this industry. This initiative would create an early sensitization and awareness to the potential business people about the industry.

Access to Venture Capital
Finance was not a major problem for Tiruppur SMEs since the activities were carried out through families with their common fund. However, the expansion of the firms has

necessitated the need for suitable sources of finance for the industry. National Small Industries Corporation and Small Industries Development Bank of India are in the forefront for venture capital financing. The following are some of the important schemes of financing:

1. National Small Industries Corporation (NSIC)
2. Bill Financing
   Bills drawn by small scale units for the supplies made to the reputed and well established enterprises and duly accepted by them will be financed/discounted by NSIC for a maximum period of 90 days.
3. Working Capital Finance
   Finance for augmenting working capital of viable and well managed units, on selective basis in case of emergent requirements, to enable them to payoff their purchases of consumable stores and spares and production related overheads particularly electricity bills, statutory dues, etc.
4. Export Development Finance
   Finance for export development to export oriented units for meeting their emergent requirements. Pre and post shipment finance shall also be provided to such units at usual terms & conditions.
5. Equipment Leasing Scheme
   The object of the Leasing Scheme is to assist SSI Units to procure industrial equipment for modernization, expansion and diversification of their industries.

   Eligibility
   Exclusively for existing & financially viable SSI units including ancillary units, duly registered as SSI units with the Directorate of Industries.

   Benefits
   It has 100% financing at very liberal terms with easy repayment schedule with simple formalities and speedy sanction. Single window system for imported equipment. The Corporation undertakes to complete formalities like procuring import license, opening of Letter of Credit etc. Tax rebate on full 5 year lease rental.

   Basic Terms
   Lease period of 5 years extendable by another 3 years. Repayment as lease rental at the rate of Rs.24 per Rs.100 per month of the cost of machine. There is no separate interest. Minimum assistance provided is Rs.100,000. The maximum is subject to SSI ceiling of Rs.6,000,000 or Rs.7,500,000 in case of an ancillary unit. The value of installed machinery at original cost including value of the machine that proposed to be obtained under leasing, should not exceed Rs.6,000,000 or Rs.7,500,000 in case of an ancillary unit.

The unit should pay the following costs before the order for equipment is:

- Amount equal to three months rental (six months rental for special equipment) and approximately 7% cost of the equipment (8% for Imported equipment), to cover the insurance charges of the machinery for the period of lease and administrative charges of the Corporation;
- The unit/party must carefully read the terms and conditions and also the list of the documents to be furnished along with the application as printed on the application

form. The party will have to execute an Agreement Bond before delivery of the machine; and
- Payment of lease rental will start after three months of delivery of machine.

6. Small Industries Development Bank of India (SIDBI):
An Act of Parliament set up SIDBI, as an apex institution for promotion, financing and development of industries in small scale sector and for coordinating the functions of other institutions engaged in similar activities. It commenced operations on April 2, 1990. SIDBI extends direct and indirect financial assistance to SSIs, assisting the entire spectrum of small and tiny sector industries on all India basis.

The range of assistance comprising financing, extension support and promotional, are made available through appropriate schemes of direct and indirect assistance for the following purposes:

- Setting up of new projects
- Expansion, diversification, modernization, technology upgradation, quality improvement, rehabilitation of existing units
- Strengthening of marketing capabilities of SSI units.
- Development of infrastructure for SSIs and
- Export promotion.

SIDBI Direct Assistance Schemes
SIDBI directly assists SSIs under Project Finance Scheme, Equipment Finance Scheme, Marketing Scheme, Vendor Development Scheme, Infrastructural Development Scheme, ISO-9000, Technology Development & Modernization Fund, Venture Capital Scheme, assistance for leasing to Non-Banking Financing Companies (NBFCs), State Finance Corporations (SFCs), State Industrial Development Corporations (SIDCs) and resource support to institutions involved in the development and financing of small scale industries.

These Schemes are addressing mainly some of the major problems of SSIs in areas such as high tech project, marketing, infrastructure development, delayed realization of bills, obsolescence of technology, quality improvement, export financing and venture capital assistance.

SIDIBI Indirect Assistance Schemes
Under its indirect schemes, SIDBI extends refinance of loans to small scale sector by Primary Lending Institutions (PLIs) viz. SFCs, SIDCs and Banks. At present, such refinance assistance is extended to 892 PLIs and these PLIs extend credit through a network of more than 65,000 branches all over the country.

All the Schemes of SIDBI for both direct and indirect assistance are in operation in all the States of the country through 39 regional/branch offices of SIDBI.

SIDIBI Promotional and Development Activities
SIDBI is actively involved in promoting small scale industries by means of its promotional and developmental activities through suitable professional agencies for organizing Entrepreneurship Development Programmes, Technology Upgradation & Modernization Programmes, Micro Credit

Schemes and assistance under Mahila Vikas Nidhi to bring about economic empowerment of women specially the rural poor, by providing them avenues for training and employment opportunities.

Table VII: *SIDIBI Refinance Against Term Loans*

A.	**Refinance against term loans in respect of projects/activities eligible for assistance under the Scheme**	**Interest on term loans for fixed assets and working capital advances (excluding interest tax) (% p.a.)**	**Interest on Refinance (% p.a.)**
(i)	Up to and inclusive of Rs. 25,000	12.0	9.0
(ii)	Over Rs. 25,000 and up to Rs. 2 Lakh[2]	Not exceeding 13.5	10.5
B.	Refinance against term loans in respect of projects/activities eligible for assistance under TDMF and ISO 9000 Schemes (Applicable to all eligible institutions) (except RRBs)	Interest on term loans (excluding interest tax) (% p.a.)	Interest on Refinance (% p.a.)
(i)	Up to and inclusive of Rs. 25,000	12.0	9.0
(ii)	Over Rs. 25,000 and up to Rs. 2 Lakh	Not exceeding 13.5	10.5
(iii)	Over Rs. 2 Lakh	Not exceeding 14.0*	12.0

SIDBI is also providing the following finance schemes for mitigating the problems of the SSI sector:

Table VIII: *Schemes for Mitigating the Problems of the SSI sector*

Sl. No.	Problem	Schemes operated by SIDBI
1.	Delayed Payment of Bills	**Direct Discounting of Bills (Components) Scheme**
		▪ Direct Discounting of Bills (Equipment) Scheme ▪ Direct Factoring Services ▪ Bills Rediscounting Scheme (Equipment) ▪ Bills Rediscounting Scheme Against Inland Supply Bills of SSI ▪ Invoice Discounting Scheme
2.	Obsolescence of Technology	**Technology Development and Modernization Fund (TDMF) Scheme (both direct and indirect assistance)**
		▪ ISO 9000 Scheme (both direct and indirect assistance)
		▪ Technology Upgradation Fund Scheme for Textile Industry (both direct and indirect assistance)
3.	Working Capital Availability	**Single Window Scheme Through Primary Composite Loan Scheme Lending Institutions.**
		▪ Working Capital Term Loan Direct Assistance
		▪ Short Term Loan
4.	Marketing Inadequacies	**Scheme for Financing Activities Relating to Marketing of SSI products**
5.	Lack of Suitable Infrastructure	**Scheme of Direct Assistance for Development of Industrial Infrastructure for SSI Sector**
		▪ Scheme of Integrated Infrastructural Development (IID)
6.	Insufficient Export Credit	▪ Export Credit

[2] Lakh = 100,000

		• Pre-Shipment Credit in Foreign Currency • Scheme for Export Bills Financing • Rupee Pre-Shipment/Post-Shipment Credit • Foreign Letters of Credit
7.	Venture Capital Availability	**Venture Capital Scheme**
8.	Human Resources Development	• Entrepreneurship Development Programmes • Small Industries Management Programme • Skill-cum-Technology Upgradation Programme

New Initiatives of SIDBI

1. Two Subsidiaries viz. SIDBI Venture Capital Limited and SIDBI Trustee Company Limited are formed to oversee **Venture Capital;**
2. **Technology Bureau for Small Enterprise** is formed to oversee Technology Transfer, Match making Services, Finance Syndication and facilitating Joint Ventures;
3. Marketing Finance & Development Department is formed to set up Marketing Development Assistance Fund;
4. International Finance Department;
5. International Co-operation Division; and
6. Foundation for Micro Credit.

Overall Assessment

SWAT

The overall assessment of Tiruppur and its textile industry can be brought through the following SWOT analysis that helps in identifying the issues that are to be addressed in the future.

Table IX: *SWAT Analysis for Tiruppur and the Textile & Garments Industry*

	Weaknesses	**Threats**
	• Under utilization of machinery resources, concentration of seasonable products, concentration on low end products • Poor water quality • Poor internal road conditions • Rampant power cuts • Pollution problems of processing • Low labor productivity • More dependency on foreign design/designers • Lack of vertical Integration	Severe competition from countries like China, Bangladesh, Pakistan, Sri Lanka Non-tariff barriers like Social accountability, environment management systems Scarcity of water Stringent pollution control norms Upcoming textile activities in nearby districts like Salem, Udumalipet, Madurai and etc.

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Strengths	**Issues to address based on SWOT**
Strong raw material base Availability of cheap labor Hard working, flexible, innovative entrepreneur Presence of related enterprises Participation of promotional institutions Strong Industry Associations Presence of exclusive ICD for Tiruppur Good Inter action among firms and institutions Pro-active marketing IKF complex Effective settlement of labour disputes Joint efforts among firms for profit initiatives	Access to market information and emerging market trends Product innovations and diversification Level of design capability Level of skills and knowledge related to quality, productivity, financial, marketing, etc. Operational costs by way of process improvement/productivity improvement and optimal use of out puts. Awareness about emerging technology, management and market environment. Organized/institutionalized mechanism/systems for sourcing of raw materials, marketing. Access to avail of institutional credit for technology upgradation and expansion of the units. Information about various Government EXIM policy schemes/non-Governmental financial support schemes. Proactive initiation on environmental related issues Exposure to better work practices and technology in the area of knitting/processing. Capacity building for Direct Exports. Creation of critical infrastructure such as effluent treatment, uninterrupted power supply, road development and provision for single stop international class manufacturing centre (Apparel parks are already created)
Opportunities	
Improved market opportunities due to opening up of markets and quota phase out Untapped market potential for winter, fashion-wears Shifting of manufacturing base from developed to developing countries in Asia increase market share globally Promotion of brand enhances market opportunity Formation of apparel parks to provide single stop international Class market	

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